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IS 12153 (1987): Adapters for Hexagonal Insert Bits for Use with Ratchet Screw Drivers [PGD 5: Assembly Hand Tools]



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Indian Standard

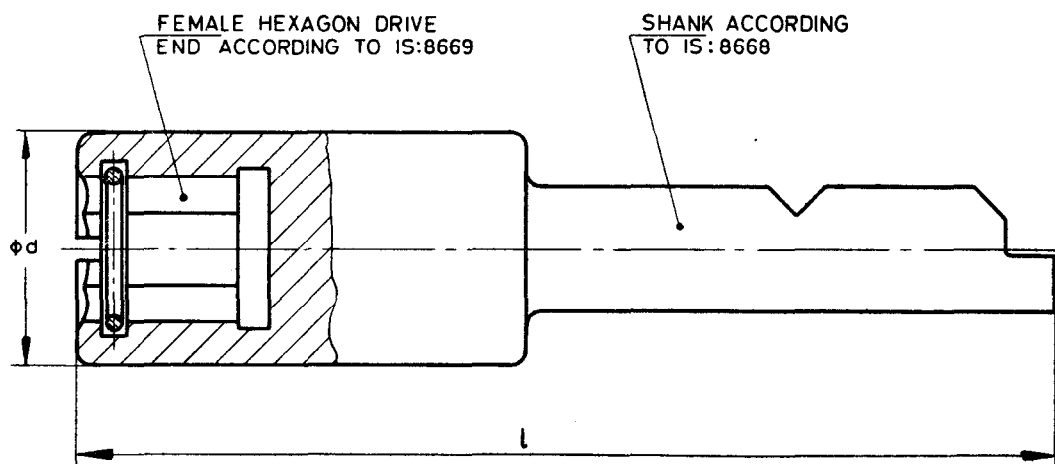
SPECIFICATION FOR ADAPTERS FOR HEXAGONAL INSERT BITS FOR USE WITH RATCHET SCREW DRIVERS

1. Scope — Covers dimensions and other requirements of adapters which fit onto screw driver bits with male hexagonal drive end, for use with ratchet screw drivers.

2. Type

- a) Type A — without magnet.
- b) Type B — with magnet.

3. Dimensions



All dimensions in millimetres.

Form	Nominal Dimension	Hexagonal Drive End*	Shank†	d Max	l, Max	
					Type A	Type B
B	3.0	A 3.0	5.5	7	60	80
	5.5	A 5.5	5.5	7	60	80
D	4.0	C 4	5.5	7	60	80
	6.3	C 6.3	7	12	60	80
	8.0	C 8	8	15	60	80
F	6.3	E 6.3	7	12	60	80
	11.2	E 11.2	8	15	60	80

*For other details of hexagon drive end, see IS : 8669-1977 'Dimensions for hexagon drive ends for power tools'.

†For other details of shank, see IS : 8668-1984 'Dimensions for spiral ratchet screwdriver shanks (first revision)'.

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3.1 The shapes, dimensions and tolerances of female hexagon ends shall conform to IS : 8669-1977.

3.2 The shank dimensions shall conform to IS : 8668-1984.

4. Material

4.1 Type A adapters shall be made from suitable steels meeting the requirements laid down in 5 and 8.

4.2 Type B adapters shall be made from suitable alloys. Composition and properties of suitable copper beryllium alloy are given below:

Beryllium (Be)	1·6 to 1·8 percent
Nickel (Ni) + Cobalt (Co)	0·2 to 0·6 percent
Copper (Cu)	Remainder
Tensile strength	1 140 to 1 210 N/mm ²
0·2% Proof stress	1 000 N/mm ²
Elongation	2 percent, <i>Min</i>

Any other material exhibiting similar characteristics and complying with the requirements laid down in 5 and 8 may also be used.

5. Hardness — All steel components, with the exception of magnetic core in case of Type B, shall be hardened to a hardness of 50 HRC, *Min*. In case of adapters with magnet, all metallic components made from materials other than steel shall be hardened to a hardness of 40 HRC, *Min*.

6. Designation — Adapters shall be designated by commonly used name, form of female end, nominal dimension of female end, type and number of this standard.

Example:

Adapters of form D, nominal dimension 6·3, Type A (without magnet) shall be designated as:

Adapter D6·3 A IS : 12153

7. Workmanship and Finish

7.1 Adapters shall be free from cracks, burrs, scales, flashes and fins produced during forging/rolling.

7.2 Adapters shall be protected against rust by plating with nickel, chromium or zinc, or by any other suitable process.

8. Torque Test—Suitable screw driver bit with male hexagon drive end and conforming to IS: 12168-1987 'Specification for screw driver bits for use with ratchet screw drivers: Part 1 For slotted head screws, or Part 2 For cross recessed head screws', shall be fitted with the adapter. Adapter shall be further fitted into spiral ratchet screw driver conforming to IS : 12167-1987 'Specification for spiral ratchet screw drivers'.

Torque test fixture as shown in IS : 12167-1987 may be used for testing the torque requirements.

After having been subjected to the test torque values specified below, the adapters shall not exhibit any permanent deformation or other damage, such as cracks or fractures, which may impair their further use.

Female Hexagon End, Nominal Dimensions mm	Test Torque, <i>Min</i> Nm
3 and 4	8
5·5 and 6·3	10
8 and 11·2	12

9. Marking — Adapters shall be marked with manufacturer's name or initials/trade-mark and designation.

9.1 Certification Marking — Details available with the Bureau of Indian Standards.

10. Sampling

10.1 In a consignment, all adapters of same type and size manufactured from the same material under similar conditions of production shall be grouped together to constitute a lot.

10.2 For ascertaining the conformity of the lot, the procedure for sampling and inspection as given in IS : 2500 (Part 1)-1973 'Sampling inspection tables: Part 1 Inspection by attributes and by count of defects (*first revision*)', shall be followed. The type of sampling plan, inspection level and acceptable quality level (AQL) to be followed for various characteristics shall be as given in **10.2.1** and **10.2.2**.

10.2.1 For ascertaining the conformity of the lot with respect to dimensional requirements, and workmanship and finish, a single sampling plan with Inspection Level IV and AQL of 1.5 percent as given in Tables 1 and 2 of IS : 2500 (Part 1)-1973 shall be followed.

10.2.2 For ascertaining the conformity of the lot with respect to hardness and torque test, a single sampling plan with Inspection Level I and AQL of 1.5 percent as given in Tables 1 and 2 of IS : 2500 (Part 1)-1973 shall be followed.

EXPLANATORY NOTE

In this specification, the position of the magnet is not indicated in order to not impair the different attachment possibilities depending on the know-how of the manufacturer. Regarding the position of magnet, it is basically positioned at the bottom of the opening of the connecting part, that is, where the rear end of the screw driver bit is supported in the connecting part.

The magnet in the connecting part gives an effect that the attached screw driver bit becomes magnetic and further the screw to be operated sticks to it. This is advantageous when mounting the screw in a confined space.

While preparing this specification, considerable assistance has been derived from DIN 7433-1978 'Adapters, for hexagon insert bits for use with spiral ratchet screw drivers', issued by the Deutsches Institut für Normung.